Homework Week #13 – Due on Friday Name: _____

"In order to succeed, we must first believe that we can!" –Nikos Kazantzakis

1. Find the inverse of the following function:

$$f(x) = x^2 + 7$$

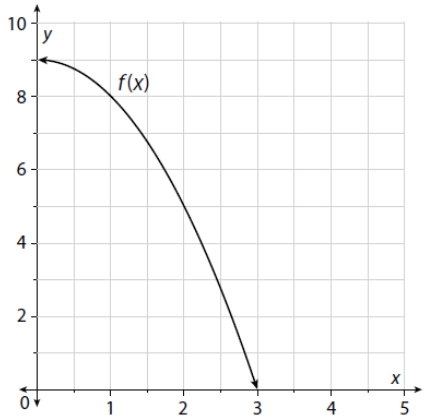
2. Find the inverse of the following function:

$$y = 3x + 2$$

3. Use the given table for $f(x)$ to find $f(1)$, $f(5)$, $f^{-1}(1)$, and $f^{-1}(5)$.

x	$f(x)$
1	4
2	1
3	2
4	6
5	3
6	5

4. Use the given graph of $f(x)$ to find $f(2)$, $f(3)$, $f^{-1}(8)$, and $f^{-1}(9)$.



Solve the following:

$\frac{2}{x-3} - \frac{4}{x+4}$	$\frac{3x}{x^2-9} + \frac{4}{x-3}$
$\frac{3x}{(x+3)} - \frac{7x}{(x+5)}$	$\frac{2x+8}{x^2-16} - \frac{3}{x-4}$
$\frac{x^2-x-2}{x^2+2x+1} \div \frac{x^2-8x+12}{x+1}$	$\frac{(x^2+7x+12)}{(x+4)} \times \frac{(x+5)}{x^2-25}$

Identify the center and the radius of the following circles:

1. $x^2 + 8x + y^2 + 6y = 0$

2. $x^2 + 12x + y^2 - 10y = 12$

3. $x^2 + 12x + y^2 + 4y = 5$

Log Review:

1. Which is equivalent to $16^{\frac{1}{2}} = 4$?

a. $\log_4\left(\frac{1}{2}\right) = 16$ b. $\log_{16}\left(\frac{1}{2}\right) = 4$ c. $\log_{16} 4 = \frac{1}{2}$ d. $\log_4 16 = \frac{1}{2}$

2. Solve for x: $3\log_7 4 + 2\log_7 2 = \log_7 x$

a) 64 b) 16 c) 256 d) 32

3. Which multiple choice is the solution to the equation $9^x = 45$?

a. $x = \frac{\log 45}{\log 9}$ b. $x = 5$ c. $x = \log 5$ d. $x = \log 45 - \log 9$

Solve for x.

4. $\log_7 64 - \log_7 x^2 = log_7 4$

Convert from logarithmic form to exponential form.

5. $\log_2 4x = 5$

Solve for x.

6. $\log 3 + \log x = \log 64$

Solve for x.

7. $\log x + \log 8 = 2$